NAVY P2 EQUIPMENT PROGRAM SAFETY AND HEALTH EVALUATION PROCESS

Craig Schilder, Dir S&H, NAVFACHQ

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OBJECTIVES

- ***Comply*** with OPNAVINST 5100.23D
- ***Reduce*** the potential for injury or illness
- ***Decrease*** the burden on activities
- ***Develop*** an evaluation process
- ***Increase*** awareness of safety and health issues
- ***Provide*** Data Sheet to activity users and maintenance personnel

ON-SITE EVALUATION PROCESS

- ***Evaluated*** 25 pieces of equipment
- ***Observed*** equipment during operation
- ***Photographed*** equipment
- ***Consulted*** equipment operator
- ***Reviewed*** manufacturer documentation
- ***Completed*** TSW
- ***Completed*** TSDS

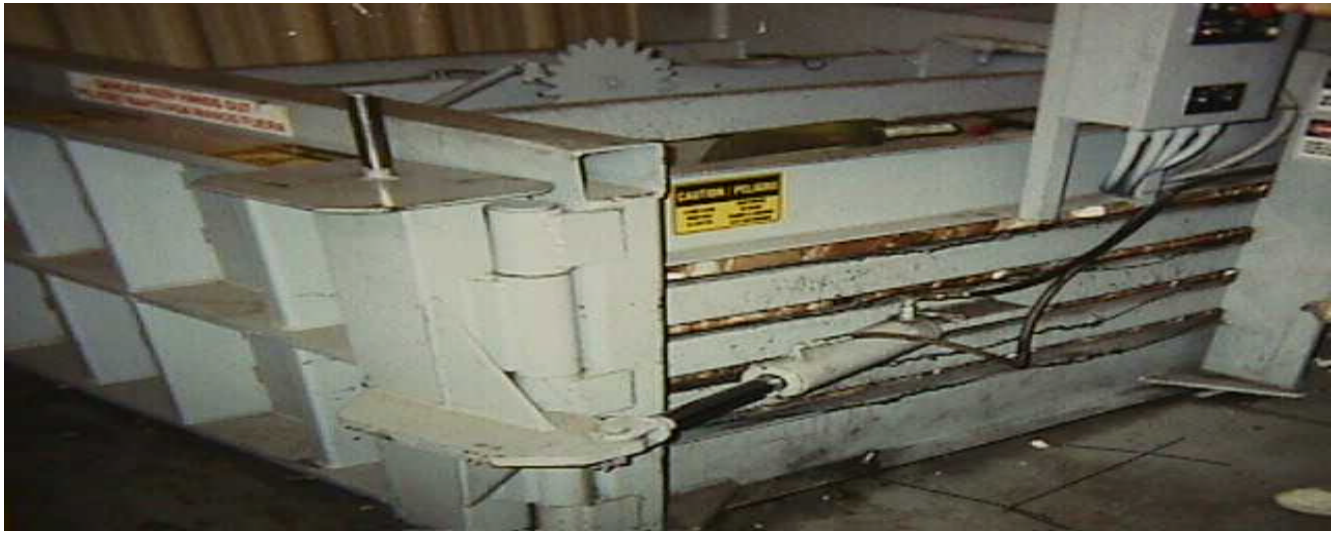
EQUIPMENT EVALUATED

- Manual High Pressure Blaster
- Large Parts Washer
- Automated High Pressure Blaster
- 55 Gallon Drum Crusher
- Oxygen Ultrasonic Cleaner
- Safety Storage Locker
- Oil Filter Crusher
- Horizontal High Density Baler
- Vertical Baler
- Maxigrind
- Enzyme Parts Washer
- Tumbler Blaster
- Silver Recovery System
- Closed Loop Wash Rack
- JP-5 Fuel Recycler
- Glovebox Plastic Media Blaster
- Paint Gun Washer
- Solvent Distillation Unit
- HazMat Dispensing Unit
- Tub Grinder
- Grapple Crane
- Straight-Line Baler
- Metal Pre-Crusher
- Aerosol Can Puncturer
- Glass Crusher

VERTICAL BALER

MAXIGRIND

HORIZONTAL HIGH DENSITY BALER



STRAIGHT-LINE BALER

EVALUATION TOOL

- ***<u>Technical Safety Worksheet (TSW)</u>***
  - Used recognized product/process safety references
  - Designed evaluation form covering:
    - Mechanical
    - Electrical
    - Radiation
    - Ergonomics
    - Pressure and Vacuum Relief
    - Piping and Valves
    - Hazardous Materials
    - Noise and Vibration
    - Additional Hazards
    - Manufacturer Documentation

TECHNICAL SAFETY DATA SHEET (TSDS)

- Provides installation, operation and maintenance precautions
- Modeled after MSDS
- User-Informative
- Procurement agent provides to activity

EQUIPMENT DESIGN NEEDS

- **Compressed Air Receivers**

  Safety devices such as safety valves, drain valves, drain traps, indicating devices and controlling devices shall be constructed, located, and installed so that they cannot be readily rendered inoperative by any means. High pressure systems will have lockout capabilities. (29 CFR 1910 Subpart M Section 169, and A.S.M.E. Boiler and Pressure Vessel Code Section VIII.

- **Compressed Gas**

  Safety relief devices shall be installed and maintained for compressed gas cylinders. (29 CFR 1910 Subpart H Section 101, and Compressed Gas Association Pamphlets S-1.1-1963 and 1965 Addenda and S-1.2-1963)

- **Electrical**

  The equipment shall be designed to protect the operator and other personnel from electrical hazards during operation or maintenance. High voltages shall be physically guarded or interlocked. Lockout devices will be provided for equipment over 110 volts. (29 CFR 1910 Subpart S Sections 302-308, ANSI/NFPA 70B-1994, and ANSI C2-1997)

- **Machinery and Machine Guarding**

  One or more methods of machine guarding shall be provided to protect the operator and other employees in the machine area from hazards such as those created by point of operation, nip points, rotating parts, flying chips and sparks. (29 CFR 1910 Subpart O Section 212)

- **Fall Protection**

  Protect all open-sided floors, platforms and runways 4 feet or more above adjacent floor or ground level with standard railing or equivalent. (29 CFR 1910 Subpart D Section 23)

- **Noise**

  Equipment shall not exceed noise emission levels of 84dB. (29CFR 1910 Subpart G Section 95 and OPNAVINST 5100.23D)

- **Process Safety Management of Highly Hazardous Chemicals**

  Process safety information and analyses shall be provided to prevent or minimize the consequences of catastrophic releases of toxic, reactive, flammable, or explosive chemicals. (29 CFR 1910 Subpart H Section 119)

- **Safety Color Code for Marking Physical Hazards**

  Emergency stopping switches shall be provided and have safety color coding. Any parts of the equipment which may cause a physical hazards such as: striking against, stumbling, falling, tripping, or "caught in between" shall be safety color coded. (29 CFR 1910 Subpart J Section 144 and ANSI Z535.4-1991)

- **Specifications for Accident Prevention Signs and Tags**

  Danger signs, caution signs, safety instruction signs, warning tags, and biological hazard tags shall be provided to define specific hazards. (29 CFR 1910 Subpart J Section 145, ANSI/SAE J115-JAN87, and Z535.4-1991)

- **Hazardous Energy Control (Lockout/Tagout)**

  Energy isolating device lockouts shall be provided to protect operators or maintainers from "unexpected" energization or start up of the equipment, or release of stored energy during maintenance or servicing of the equipment. (29 CFR 1910 Subpart J Section 147)

- **Toxic and Hazardous Substances (Air Contaminants)**

  No toxic or hazardous substances will be provided with or required by operation or maintenance procedures. (29 CFR 1910 Subpart Z)

- **Repetitive Motion, Vibration or Heavy Lifting**

  Equipment will not be designed that requires excessive repetitive motion, excessive operator vibration or heavy lifting (above 35 lbs). Weights of "heavy" components will be identified and either multiple person carry grips or material lifting capabilities will be provided.

- **Mechanical Hazards**

  Equipment will not be designed to avoid incorrect connections that will create a hazardous situation from electrical power, mechanical energy, etc to harm the operator or the maintenance person.

- **Documentation**

  Equipment documentation will include adequate cautions and warnings for the operators and maintenance personnel.

EQUIPMENT INSTALLATION NEEDS

- Adequate ventilation
- Properly Grounded
- Protect hydraulic hoses
- Post warning signs (Noise)
- Provide rubber mats or non-skid surfaces to prevent slipping
- Adequate control of dust and particulates
- Other

EQUIPMENT MAINTENANCE NEEDS

- Emergency shutoff
- Lockout Protection
- Interlocks
- Guards on moving parts
- Hot surfaces labeled/guarded
- Adequate safe access (slip/trip/fall)
- Other

ROLES

- **User**
  - Obtain TSDS from Navy Procurement agent
  - Safe Installation/Operation/Maintenance
  - Provide Protective Equipment
- **Procurement Agent**
  - Comply with OPNAVINST 5100.23D
  - Evaluate/Procure/Provide TSDS
- **Manufacturer**
  - Safe/health design, construction, operation/ maintenance manuals
- **CNO N45**
  - Pollution Prevention=Efficient/Quality/Safe Equipment

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